Collative Study of Manual and Online Ordering System for Food Courts

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Abstract—Nowadays more people prefer to dine out and the food and beverage industry has to revolutionise its way of serving customers in order to remain sustainable to the growing population. The food court is one such place where the crowd is immense at all times because customers after they complete their shopping tend to go to the food court. Almost all the restaurants in the food court have a long queue depending on the rush and this is very time consuming for the customers. The role of food in a mall is important and will continue to be. Mall food-hall offerings will only continue to evolve. Evolution is a matter of survival of the fittest, and the food court is no such exception. While mall industry representatives insist their hall offerings will continue to be, closer to the business tell a different story. This paper aims at developing a web based online application that shall assist users to order their choice of meal from any restaurant in a food court. This application shall let customers decide and order their meal of choice, from the comfort of their tables and shall let them jump the queue.

Keywords—Manual ordering system, food courts, Web based ordering portal, DOM, Java, HTML, MySql, Django

I. INTRODUCTION

A food court is generally an indoor plaza or common area within a facility that is contiguous with the counters of multiple food vendors and provides a common area for self-serve dining. Food courts consist of a number of vendors at food stalls or service counters. Meals are ordered at one of the restaurants and then carried to a common dining area. The food may also be ordered for takeaway where customers can consume their food at a different location, such as at home or at workplace.

Food courts may be found in shopping malls, airports, or parks. In many different regions food courts are developed as a standalone system. In some places such as high schools and universities, traditional cafeterias have been replaced by food courts.

Most of the restaurants in the food courts offer a very limited menu to choose from. In these restaurants the food is cooked in bulk in advance and packaged for order. The delivery for the order is usually available for pickup or to be delivered though seating may also be provided. Customers presently spend an average of 30 minutes (per visit to the mall) going to the food court, finding a table to sit, learning menu of the all the restaurants, collecting orders from their friends and family, waiting in queue and finally placing their order.

Once the order is placed, it may take anywhere between 10-20 minutes until the order is ready for pick-up, depending on the restaurant and the order.

This paper focuses on easing the process of food ordering in food courts where the rush can be immense. The basic problem in the food service industry is that restaurants are not realizing the efficiencies that would result from better applications of technology in their daily operations. Every restaurant in the food court has a counter where you can place your order and then make the payment. So every restaurant needs an employee for taking the order and processing the payment. Since labour rates are increasing every now and then, it has been difficult to find employees who are ready to work for an average salary. Therefore to solve this problem we plan to design a “Web Based Ordering Portal For Food Courts.”

II. LITERATURE SURVEY

Competition in the food service segment is also becoming increasingly fierce as restaurants look to attract diners from other types of restaurants in order to increase their own traffic. Competitors who do not update their menu frequently or those who do not offer new services are the ones who feel the strongest pressure from other competitors. Restaurants that demonstrate this innovation and provide creativity to improve the service will be those that achieve differentiation from competitors. Moreover, those restaurants that can appeal to a wider variety of customers providing new concepts will also realize increased returns.

The manual food ordering system relies on a lot of manpower to handle all the process from taking the order from the customers and informing the kitchen staff to prepare the food and delivering the food to the customers. This system requires the customers to stand in a queue to place their orders and wait for their food which is time consuming. Therefore the system which we are developing helps to reduce the manpower in ordering task and at the same time reduce the monthly cost for the restaurant. This project helps the customers to make their order through the system and directly store to the database.
2.1 Existing System: R&D

2.1.1 Advantages:

- It is simple in operation.
- It helps us to enable on easy discounting charges on certain occasions like “supplement checks” on customer satisfaction.
- The operation is not costly.
- Any external source of energy like electricity, battery power etc is not required to run.
- It helps us to order dishes which are not on the menu like “dish of the day”.

2.1.2 Challenges

- Since people aren’t perfect, manual ordering systems puts a lot of pressure on people to be correct in all details of their work at all times.
- The manual ordering systems makes the level of service dependent on individuals and because of this the management is required to run training continuously for the staff to keep them motivated and to ensure that they are following the procedures correctly.
- It can be quite easy to accidentally switch details of two orders and end up with inconsistency in data entry or in hand written orders.
- Often a manual transaction must be completely redone rather than just updated when mistakes are made or changes are needed. With manual systems information often has to be written down and copied or entered more than once. Systemization can reduce the amount of duplication of data entry.

In recent times, with the intelligent use of technology there has been a dramatic shift in customer engagement. Enabling customers to pre-order their meal through websites and mobile applications would be an example of this. This service is provided by Multiple Quick Service Restaurant (QSR) outlets such as Mc Donald’s, Pizza Hut and KFC.

We intend to create an online application that shall not only enable the end user to order meals via their phone but also to serve as a marketplace for various QSR outlets in food courts exclusively. Most QSR applications available only enable users to view the menu and order their meals for home delivery. Outlets also use this as a medium to notify their patrons of regular offers.

For front-end programming, HTML+CSS and JavaScript would be used in order to develop a clean and intuitive user interface. Programming on the server side would be achieved using Python and the Django web framework. My SQL would be our choice of database.

2.1.3 HTML (Hyper Text Mark-up Language):

- HTML5 is an amended version of the original HTML standard created in 1990 by the World Wide Web Consortium to define an Open Web Platform.
- It is a language used for structuring and presenting content on the Web consistently. It can develop applications which are compatible across various platforms, as most of the features have been incorporated considering working on the low powered devices, such as Tablets and Smart Phones. It also provides tools like CSS for the web developers.
- It is not dependent on the underlying operating system.

2.1.4 CSS (Cascading Style Sheets):

- It is the language used for designing and styling the web document pages.
- It can be interpreted by all graphical web browsers irrespective of the device or operating system and can be used to modify the appearance of a web page according to the device or screen size.

2.1.5 Advantages of HTML and CSS:

Using HTML and CSS provides advantages of developing web content and web applications that operate across devices, operating systems and web browsers.

- Economical Multiple-Platform Compatibility: A single batch of code can be used across platforms, devices and different markets because it lowers development and maintenance costs.
- Good page ranking: If the website is not semantically accurate then the page itself will not attain a good rank within search engines. HTML and CSS rules help is designing a user friendly and attractive application.
- Offline browsing: It supports local storage of web application code and content, through the offline application cache; it boosts up the performance as the content can be accessed quickly.
- Consistency across multiple browsers: It helps the designer to create a site compatible with all the systems and browsers.
- Business Intelligence: Devices compatible with HTML will have the ability to collect and use data using browser based analytics tools.
- Geo-location: It supports geo-location. Once a user opts to share the location, an application can use the user’s location in various location based service and app.
A better user experience: It provides a variety of design and presentation tools giving the developers a better scope to develop finer web sites and applications.

2.1.6 JavaScript:
It is one of the most simple and effective scripting languages developed by Netscape used to extend functionality in websites. Although it shares many of the features and structures of the Java language, it is different from java. It can interact with HTML source code allowing developers to modify sites and application. It is an open language that anyone can use without purchasing a license.

Advantages:
- It is executed on the client side. This means that the code is executed on the user's processor instead of the web server thus saving bandwidth and strain on the server.
- It is a relatively easy language. The syntax is similar to the English language and uses the DOM model that provides lots of prewritten components.
- It is relatively fast for the end user as the code is executed on the user's computer; it will not consume any bandwidths and processing is completed instantly depending on the task.

2.1.7 MySQL:
MySQL is an open source relational database management system (RDBMS) based on Structured Query Language (SQL). It works on almost all the platforms like Linux, UNIX, and Window.

Advantages:
- It is a database management system
- MySQL databases are relational.
- MySQL software is Open Source.
- MySQL Database Server is very quick, dependable and user-friendly.
- MySQL Server works in a client/server architecture or embedded systems interfaces and it can be widely useful.
- Several MySQL softwares are available in the market giving users plenty of choices.

2.1.8 Python & Django:
In object oriented programming language platform, python plays a dynamic role. It provides and supports for integrating various complex technologies and gives out higher programmer productivity. Python is similar and often compared to other known languages like java and Microsoft.net based.

Python is extensively used in most database interfaces, text processing and other technologies.

Python is very well designed. Its open source feature is very advantageous. It has easy to learn syntax and well developed language features like fast, robust, portable and scalable.

Django is web framework belonging to the Python language. It focuses the required details of the respective Web application. It cancels out the repetitive its problem, making it comfortable and user friendly. The main goal of Django is to reduce the complexity of creating database driven applications. Various features like create, read, delete, update etc and are generated introspection and configured via different admin models.

Advantages:
- Database handling feature is better in python. Various database programs like – MySQL, PostgreSQL, or Oracle Django uses the powerful python database handling It provide features like easy data creation, manipulation, migration, and other database functions.
- Simple and useful design – Administrator will have access to everything that is required and can also perform other necessary actions like modification, manipulation and uploading of images/videos/files etc.
- Python provides the access control list also known as ACL which is used for various relation linking.
- The relation linking in python is very simple and efficient. It helps us to easily add a new user to the already existing and configured list by the developer. This group holds many users. We can then configure automatically without having to return to adding any new substance and losing any important data
- It is one of the most powerful web frameworks available in terms of wide usage of admin panel
- And lastly, as Django is a big community, tons of ready solutions, various different types of forms are available to the users.

III. CONCLUSION AND FUTURE WORK
A new type of application is proposed which greatly simplifies the ordering process for both the customer and the restaurant by allowing the customers to place their order online for their choice of restaurant in the food court. It can prove worthy in transforming ordering processes in food courts. The proposed system will help in reducing the long queue of people present in the food courts to place their respective orders. It helps in reducing the number of staffs used in the restaurants hence will help in considerably reducing cost of restaurant management. It will also minimize manual service given by waiters and serving staff, thus eliminating the human mistakes.
It can also help in reducing child labour problem, which is a huge problem in countries like India.

As part of the future scope, following are the milestones we wish to achieve:

- Addition of several malls and food courts across the country and their respective location preferences. This will benefit the customers to choose according to their convenience.
- Next, tight integrations with various social media platforms such as Facebook, Instagram, Twitter etc.
- Another scope of this project would be to implement the facility of ordering online for restaurants and hotels. This will help us in saving considerable amount of time by placing the order before we go to the respective hotels and restaurants.
- Finally, to enable advanced pre-ordering feature where we can pre-order and specify the exact time (in hours) to collect food at the counter so that the staff can process our order accordingly.

REFERENCES


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